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ABSTRACT

An evaluation of the capacity of Nova Southeastern University (NSU) in the area of externally sponsored funding was completed at the request of the university's executive vice president for administration. The director of the university's Office of Grants and Contracts used various data sources to examine the university's capacity for externally sponsored funding in the context of other institutions and to prepare recommendations for pursuing sponsored funding. The findings suggest that NSU has a diverse faculty with a wide array of professional interests. A number of faculty members have translated these interests into viable and fundable projects in support of research, teaching, and service. These projects have enabled the university to make substantive contributions to knowledge in many fields. NSU has the potential to do much more, especially if it continues to hire faculty with strong research and grant development backgrounds. NSU should provide motivators and decrease barriers to sponsored funding, and it should consider the staffing necessary to complete university-wide proposals. The university should continue its current initiatives and implement new initiatives, including considering internal award programs. One appendix contains an overview of pre- and post-award functions of the NSU Office of Grants and Contracts, and the other appendix contains an outline of the essential elements of re. arch administration. (Contains 4 tables and 10 references.) (SLD)

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STRENGTHENING NOVA SOUTHEASTERN UNIVERSITY'S CAPACITY IN EXTERNALLY SPONSORED FUNDING: A REVIEW OF BEST PRACTICES

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Executive Summary

This report entitled, *Strengthening Nova Southeastern University's Capacity in Externally Sponsored Funding: A Review of Best Practices*, was completed at the request of the university's executive vice president for administration. Specifically, he requested that the director of Nova Southeastern University's (NSU) Office of Grants and Contracts examine the university's capacity in the area of externally sponsored funding, within the context of other institutions, and provide recommendations on ways that it may strengthen its capacity in this area.

In preparing the report, the director identified six areas for review, as follows.

- The importance of sponsored funding to institutions of higher education in general and NSU in particular.
- Background information regarding sponsored funding activity at NSU, including the evolution of the university's current Office of Grants and Contracts.
- Role and responsibilities of the university's Office of Grants and Contracts, within the context of those identified by the National Council of University Research Administrators and the Society of Research Administrators.
- A survey of comparable Carnegie Foundation doctoral research intensive institutions for the purpose of comparing and contrasting sponsored funding functions and responsibilities with NSU's Office of Grants and Contracts.
- A comparison of NSU with the *Performance Benchmarking in Sponsored Programs Administration: Results from the 1999 Nationwide Data Collection* and an analysis of that comparison.
- A discussion of faculty motivators and barriers to pursuing sponsored funding.

As a result of this review and analysis of the information, a number of recommendations are provided for administrative consideration and decision-making with respect to sponsored funding activity at NSU.

In summary, NSU has a diverse faculty with a wide array of professional interests. A number of faculty have translated these interests into viable and fundable projects in support of research, teaching, and service. These projects have enhanced teaching and learning at NSU, enabled the university to make substantive contributions to the body of knowledge in many fields, and to reach out to multiple constituents with innovative projects and services. As a mature, growing institution, NSU can do so much more. The collective intellect, enthusiasm, creativity, and competence of its faculty represent significant potential for garnering a greater level of sponsored funding. The institution needs to explore how it may better tap that potential for its long-term interests. This report has highlighted NSU's capacity to move in that direction and has recommended some vehicles for accomplishing that goal.

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I. Introduction

A. Purpose of the Report

Recently, discussions have occurred in a number of forums, such as the University Planning Council, budget meetings, the Committee for Research, Scholarship, and Faculty Development, and meetings with university lobbyists, regarding Nova Southeastern University's (NSU) sponsored funding activities and efforts that may be taken university-wide to enhance the level of funding. These discussions revealed a recognition on the part of NSU administration that a gap exists between funding opportunities to support sponsored projects and NSU's capacity to take full advantage of these opportunities. Out of these discussions came a request from the executive vice president for administration that the director of the Office of Grants and Contracts examine NSU's capacity in the context of other institutions and provide recommendations on ways that NSU may strengthen its capacity in the area of externally sponsored funding. This report is the result of that request.

In preparing the report, the director established a plan which identified six areas for review, as follows.

- The importance of sponsored funding to institutions of higher education.
- Background information regarding sponsored funding activity at NSU, including the evolution of the university's current Office of Grants and Contracts.
- Role and responsibilities of the university's Office of Grants and Contracts, within the context of those identified by the National Council of University Research Administrators and the Society of Research Administrators.
- A survey of comparable universities for the purpose of comparing and contrasting sponsored funding functions and responsibilities with NSU's Office of Grants and Contracts.
- A comparison of NSU with the *Performance Benchmarking in Sponsored Programs Administration: Results from the 1999 Nationwide Data Collection.*
- Faculty motivators and barriers to pursuing sponsored funding.

As a result of this review and analysis of the information, recommendations are provided for administrative consideration and decision-making with respect to sponsored funding activity at NSU.

B. Importance of Sponsored Funding to Institutions of Higher Education

Now is a particularly critical time for institutions of higher education, with a number of internal and external forces coming together to dramatically change how they look, how they function, and indeed, how they survive. In particular, these changes hold the potential for having both short- and long-term effects on NSU in general and its ability to attract increased sponsored funding in particular. These forces include changing demographics, increasing government intrusion into higher education, threats to financial aid, the continuing debate over teaching vs research, the proliferation of for-profits that are challenging traditional notions of education, while established institutions of higher education jockey to catch up and maintain their hold on

shifting markets, and the actions of the current administration in Washington to direct considerable support for educational initiatives to the states.

In times of increasing change and competition for students, quality faculty, and regional and national recognition, it is essential to generate funding from sources external to the institution. It is even more compelling for NSU given its historically high tuition dependence. For example, as reflected in the university's *2000 Annual Report,* tuition and fees represented 76.3% of FY 1999-2000 revenue. The university is vulnerable fiscally, therefore, to even modest changes in enrollment patterns. Therefore, external funding to support research, teaching/training, and community service projects can provide enormous benefits to the university. Some of those benefits include the following.

- Supports valuable services to various populations in the external community, which, in turn, enhance the visibility and reputation of the university.
- Attracts potential new donors as a result of enhanced visibility and reputation.
- Improves the fiscal health of the university.
- Impacts recruitment of students as they are provided with opportunities for hands-on participation in projects and the acquisition of additional skills not available in a purely teaching environment.
- Supplements projects/programs the university intended to implement anyway, by covering a portion of salaries, the purchase of new equipment, the payment of rental space, or other operating expenses.
- Provides opportunities to conduct activities that benefit both the internal and external community that otherwise would not be available, particularly in times of tight budgets and scarce resources.

Externally funded projects at NSU have resulted in the establishment of new community service programs which have been institutionalized; the development of new courses and curricula; provided opportunities for faculty to explore new ideas, formulate hypotheses, and obtain results; led to publications; and provided for professional development.

II. Background of the Sponsored Funding Function and Activity at Nova Southeastern University

In order to gain a clear and accurate perspective on the current status of sponsored funding activity at NSU, it is important to examine such activity against a backdrop of precedent and practice at the university. Particularly relevant to this examination are factors which have constrained NSU's ability to pursue and/or achieve significant diversification in its funding base through sponsored funding.

NSU is not a research institution and historically has not sought such an identity. Its predominant focus has been and remains practitioner preparation. Although the university currently receives externally sponsored funding from a variety of public and private funding sources totaling in excess of $19 million, and notwithstanding the fact that this amount represents a 69% increase over the past five years, NSU remains a predominantly tuition-dependent institution, as noted above.

During NSU's early history, grant development was pursued by faculty and staff based largely on individual interest and initiative (predominantly at the Center for Psychological Studies and Oceanographic Center), and not as a component of a larger, comprehensive plan. Therefore, proposed projects and programs may or may not have been consonant with the mission, goals, and objectives of the university or with those of a specific center. Prior to 1990, the university had allocated no staff to centralized pre-award activities. Faculty and staff with the inclination and authorization to pursue sponsored funding did not have access to needed technical assistance and consultation services that would facilitate successful funding initiatives. Faculty load demands typically precluded a substantial level of sponsored funding activity. Indeed, grant development activities, if assumed at all, were done so as an "add on" function for faculty and staff, often precluding the necessary attention to detail and quality.

Between 1990 and 1994, the pre-award sponsored funding function was staffed by a full-time professional position and one-half of a support staff position. Similarly, the post-award sponsored funding function was staffed by a full-time professional position and a full-time support staff position. Complicating such limited staffing allocations was the fact that the university had maintained for the previous four years a bifurcated system in which the pre-award and post-award functions were segregated organizationally. The pre-award function was housed within the office of the vice president for research and planning, while the post-award function was housed within the office of the vice president for finance and administration. This hindered effective communication, coordination, and resource mobilization relative to sponsored funding.

In 1994, following the merger of the university with Southeastern University of the Health Sciences (SEUHS), the president established the current Office of Grants and Contracts, and centralized NSU's sponsored funding activities within this office. At that time, the total amount of sponsored funding the institution was receiving was approximately $9 million. This office represented an integration of sponsored funding-related resources from both institutions. However, the resources of SEUHS consisted of only one professional level position, and just prior to the merger one of NSU's professional level positions was vacated. Consequently, the newly formed entity, while integrating pre-award and post-award functions within a single unit for the first time, nevertheless, was minimally staffed with two professional level positions and one support position. Since that time the office has expanded to include 5.5 professional and 2 support staff positions with responsibility for completing a number of functions which are described in the following section.

III. Overview of Nova Southeastern University's Office of Grants and Contracts' Role and Responsibilities

NSU's Office of Grants and Contracts serves as the central point through which all proposals for sponsored funding in excess of $5,000 from federal, state, and local government, and foundation and corporate sources for research, teaching/training, and community service projects and programs are coordinated, managed, and administered. The office staff have responsibility for providing service and support to all 16 of the university's academic units throughout the pre- and post-award grant and contract phases.

Pre-award activities related to sponsored funding administration can include such widely divergent activities as funding searches, proposal development, and involvement with institutional review boards relating to humans used as subjects in research. Post-award activities can include such activities as assistance to principal investigators in award administration to preparation of contracts and subcontracts to participation in audits. In addition to these services, the Office of Grants and Contracts provides an array of other pre- and post-award services which are detailed in **Appendix A**.

In addition to those pre- and post-award services detailed in Appendix A, other services and resources provided to the university community by the Office include service and support to the university's Institutional Review Board, inter- and intra-coordination of collaborative project development, design and maintenance of both pre- and post-award funding databases, completion and dissemination of ad hoc/management reports for both internal and external consumption, the provision of grant workshops, the development and dissemination of various grant/contract-related fact sheets, brochures, manuals, and policies and procedures, the development and dissemination of a quarterly newsletter, and the maintenance of the Office's web site.

The National Council of University Research Administrators (NCURA) and the Society of Research Administrators (SRA), the two premier professional organizations in the field of research administration, have developed a *Topical Outline of the Essential Elements of Research Administration* **(Appendix B)**. This document was developed to assist institutions of higher education and their research administrators in assessing and further developing institutional tools to support the sponsored projects enterprise. While the *Outline* is comprehensive and is meant to serve as a general guide for all institutions, both organizations recommend that every institution and its research administrators must use the information in conjunction with institution-specific policies and practices. A review of the services and support provided by the Office of Grants and Contracts relative to those addressed in the *Outline* reveals that, given NSU's institutional mission, priorities, and existing resources, the Office of Grants and Contracts is providing an exceptionally high level of service to the university community.

IV. Office of Grants and Contracts' Productivity

The Office of Grants and Contracts maintained a high level of productivity during FY 99/00. Specifically, the office distributed funding information /announcements to 395

administrators, faculty, and staff, up from 283 in FY98/99; facilitated the submissions of 172 proposals, representing a 17% increase over the previous year; provided administration for over 100 active awards; continued service and support to the Institutional Review Board and provided tracking and oversight of 1,173 research protocols; developed and distributed, both in hard copy and online, a comprehensive *Grant and Contract Policy and Procedure Manual;* and redesigned the office's web site to include a multitude of new and expanded resources. Additional activities included the delivery of two Grant Development Brown Bag Lunch Workshop Series, coordination and preparation of NSU's university-wide Organizational Profile for the Coordinating Council of Broward, completion of a number of contracts/subcontracts, which included coordination of legal review and negotiation of final contracts/subcontracts with recipients, and participation in the President's Faculty Scholarship Award review process. The director also was a guest lecturer for a number of courses offered by the academic units and provided custom workshops, upon request, to individual units.

V. Comparison of Nova Southeastern University's Office of Grants and Contracts' Services with Other Institutions

One hundred and ten public and private universities throughout the country are designated by the Carnegie Foundation Classifications as doctoral research intensive institutions. NSU is one of these institutions, along with four other Florida institutions (Florida Atlantic University, Florida Institute of Technology, University of Central Florida, and University of Sarasota). A sample of 9 of these institutions, or 9%, were identified; the sample includes five public and four private schools and includes two Florida institutions. A telephone survey with the director of each of the institutions' office of sponsored funding was conducted for the purpose of eliciting comparative information with respect to organizational profiles (i.e., enrollments, full-time faculty, type of institution, sponsored administration staffing, level of extramural funding activity, and level of extramural funding) and sponsored administration services (i.e., funding searches, proposal preparation activities, post-award activities, service and support to the IRB, newsletters, training, and web sites). The results of that survey are reflected in Table 1 which follows.

Table 1-Institutional Profiles of Selected Carnegie Foundation Doctoral Research Intensive Institutions

Institutional Characteristics	Nova Southeastern University	Ball State	Baylor University	University of Central Florida	DePaul University	Fla. Atlantic University	George Mason University	Hofstra University	Miami University	Pace University
Enrollment	18,587	17,500	13,719	33, 000	20,800	21,329	24,180	13,140	16,100	14,000
Full-time Faculty	479	900	662	900	581	850	916	489	850	451
Type of Institution/Founding Date	Independent (1964)	Public (1918)	Private (1845)	Public (1963)	Private(1898)	Public (1961)	Public (1957)	Private (1935)	Public (1809)	Private (1906)
FY 1999/00 Proposals Submitted	172	363	77	797	173	582	695	80	No count	50
FY 1999/00 Awards Received	92	239	30	857	101	458	588	60	371	32
Total Amount of Sponsored Funding	$19.6 M	$11.1M	$4.7M	$52.8M	$16.7	$36.6M	$43.8M	$5M	$22.8M	$8M
Total Sponsored Administration Staffing	5.5 Professional 2 Support	9 Prof., 4 Support, 3 Students	2 Professional, 1 Support	27 Prof., 3 Support, staff in each acad. unit	5 Professional, 2 Support	7 Professional, 4 Support	23 Professional, 2 Support	2 Professional, 1 Support	3 Professional, 3 Support	1.75 Professional, .33 Support
Sponsored Administration Services	Pre- and Post Award	Pre-Award	Pre- & Post Award	Pre- & Post Award	Pre- & Post Award	Pre- & Post-Award	Pre-& Post-Award	Pre- and Post-Award	Pre-Award	Pre- Award
Funding Searches	✔	✔	✔	✔	✔	✔	Limited	✔	✔	Shared w/dev.off.
Consulting: Concept Development, Project Design	✔	✔	✔	Only for larger initiatives	✔			✔	✔	✔
Proposal Preparation: Typing	Limited	✔	Limited		✔					
Editing	✔	Limited	✔		✔			✔		✔
Writing					Some Inst-wide			Some Inst.-wide	Some Inst-wide	
Budget Development	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Copying	✔	✔	✔	✔	✔		✔	✔		Limited
Mailing	✔	✔	✔	✔	✔		✔	✔		Limited
Post-award: All non-accounting functions (i.e. set up accounts, write contracts/SubKs, coordinate contract legal review, audits, etc.)	✔		✔	✔	✔	✔	✔ (Includes financial mgmt.)	✔		
Service & Support to IRB	✔	.75 FTE		1.0 FTE	1.0 FTE	1.0 FTE, plus support staff	1.0 FTE	✔	✔	✔
Newsletter	✔	✔		✔		✔		✔	✔	✔
Training Workshops	✔	✔	Sporadic	✔	✔	✔	✔	✔	✔	✔
Web Site	✔	✔	Very limited	✔	Limited	✔	✔	Very limited		Very limited

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As the results of the survey show, three of the schools (Ball State, Miami University, and Pace University) are responsible for pre-award services only; a separate office in these institutions is responsible for all post-award services. All schools indicated that faculty are responsible for writing their own proposals; however, three of the schools—DePaul, Hofstra, and Miami Universities—stated that they have been involved in assisting with the writing of a limited number of "university-wide" proposals, such as TRIO and Title III. All schools, with the exception of Baylor University, are responsible for providing service and support to their Institutional Review Boards (IRB); however, five of the schools have either a full-time or three-quarter time position designated to that responsibility. At NSU, the director and the assistant to the director are responsible for IRB service and support. Furthermore, two of the schools with funding in excess of $40 million—the University of Central Florida and George Mason University— have large numbers of staff, and while they perform some pre-award functions, focus more predominantly on post-award functions. The University of Central Florida, which has staff in each of the academic units, appears to follow a decentralized model. Florida Atlantic University, with funding of approximately $36 million, has less staff than the University of Central Florida and George Mason University, however, it also appears to focus predominantly on post-award service and support. Moreover, it appears from a review of the responses to the survey, DePaul University is most similar to NSU in terms of proposals submitted, funding received, staffing, and pre- and post-award service provision. In summary, an examination of NSU's operation and administration of the grants and contracts function, within the context of other comparable institutions, reflects a relatively similar organizational structure, as well as a similar, if not in some cases, a slightly higher level of service and support.

VI. Overview of the 1999 National Benchmarking Study and Comparative Performance of NSU

The Society of Research Administrators (SRA), the National Association of College and University Business Officers (NACUBO), and KPMG Higher Education Consulting have jointly undertaken the development of a national benchmarking and best practices program. The purpose of the program is to provide participating institutions and the sponsored program community with a basis for quantitative and systemic analysis of their operations and activities. Sixty-two public and private institutions, representing 40% of total academic research expenditures, participated in the study and submitted data covering activity for FY 98. For this study, data was collected on 14 measures or metrics that fell into three major categories:

- Sustaining or enhancing sponsored projects activity and funding;
- Containing the costs and improving the efficiency of sponsored projects administration; and
- Improving administrative services to faculty.

The study presents the results for each metric in terms of the "median range" of results for a given set of institutions. The "median range" roughly represents the 50% of the institutions performing near the average on that metric. Roughly 25% of the institutions perform at a higher level than the "median range" and 25% perform at a level below that range. As pointed out in the study, the results provide some external benchmarks for *all* institutions.

There were five measures included in the first category, sustaining or enhancing sponsored projects activity and funding. These measures focused on indicators of faculty participation in sponsored projects, and overall institutional track record growth of sponsored projects activity and funding. Table 2 reflects NSU's standing in comparison to the benchmark range.

Table 2
Category 1: Sustaining or enhancing sponsored projects activity and funding

	Measure/Metric	Benchmark Range	Nova Southeastern University
1.	Number of proposals submitted per total faculty FTE	0.63-1.12	.36 [Well below range]
2.	Percentage of faculty working as active principal investigators	31.3%-53.2%	12% [Well below range]
3.	Sponsored project dollars per total faculty FTE	$36,352-$86,638	$40,900 [Mid-range]
4.	Growth in sponsored projects funding over five years	3.3%-9.5%	69% [Well above range]
5.	Number of new awards as a percent of number of new proposals submitted	54.4%-75.6%	53% [At range]

As Table 2 reflects, NSU falls below the median range on metric 1, which was calculated by dividing the total number of proposals submitted (172) in FY 99/00 by the total faculty FTE (473) for the same time period. Metric 2 was calculated by dividing the total number of faculty currently working as active principal investigators (56) by the total current faculty FTE (479). NSU falls significantly below the median range on this metric. Metric 3 was calculated by dividing the total sponsored project dollars NSU is currently receiving ($19,591,577) by the total faculty FTE (479), for a total of $40,900 as the sponsored project dollars per total faculty, which is within the median range. Metric 4 was calculated by

subtracting the total sponsored funding received in FY 96/97 ($11,595,573) from the total current sponsored funding ($19,591,577), for a difference of $7,996,004, which was then divided by the FY 96/97 figure. As the results show, NSU is significantly higher than the median range, and underscores the tremendous growth in sponsored funding over the past five years. Finally, Metric 5 was calculated by dividing the total number of awards received in FY 99/00 by the total number of proposals submitted for that period, to reveal a "hit rate" of 53%, which is just very slightly below the median range. The team acknowledged that the study was flawed in one respect, as proposals are not usually funded in the year they are submitted, therefore, the metric does not portray a true "one-to-one" picture.

The benchmark study results for these five measures reflected that faculty proposal preparation activity tended to be higher if faculty from many units are involved , as well as when a higher fraction of faculty within each unit are active in proposal submission. Moreover, the study notes that research intensive institutions, especially those with medical schools, generate more proposals per faculty FTE than institutions which are less research-intensive. Additionally, the results reflect the effectiveness of faculty proposal development, and the ability of faculty members to successfully target potential sponsors for their research, sell their ideas, and successfully craft appropriate proposals, and to some extent the success of the research administration function in supporting faculty in these efforts. The longitudinal measure of sponsored projects funding growth over five years is an indicator of faculty capacity and effectiveness in securing external sponsors, while metric 5 measured overall effectiveness in proposal development or the "hit rate." While the study showed that the "hit rate" for research intensive institutions was somewhat higher than for non-research intensive institutions, the difference may be attributed to the fact that faculty from research intensive institutions are submitting more proposals to maximize the probability of a hit. Faculty from less research intensive institutions focus more carefully with their limited time and resources on funding opportunities they are likely to get.

The study concludes that the results on these metrics likely reflect differences in institutional missions, research strengths, and priorities reflected in teaching requirements and expectations for salary and other support. Moreover, the study states that the results may also show that the faculty members from the research intensive institutions are expected to be involved in more than one sponsored project at a time.

Three measures applicable to NSU's Office of Grants and Contracts, comprised the second category, containing costs and improving the efficiency of sponsored projects administration. These metrics focus on overall productivity and efficiency of sponsored projects administration and post-award financial management functions in terms of transaction costs and staffing ratios. Table 3 reflects NSU's standing in comparison to the benchmark range. [Note: Metric 4 of this category dealt with financial management and was not considered here, as at NSU that function is completed by Grants and Contracts Accounting rather than the Office of Grants and Contracts].

Table 3 Category 2: Containing the costs and improving the efficiency of sponsored projects administration			
	Measure/Metric	**Benchmark Range**	**Nova Southeastern University**
1.	Number of proposals submitted per central sponsored projects administration FTE	48.8-106.1	57.33 [Mid-range]
2.	Number of central sponsored projects administration FTE per $10M funding	0.90-2.73	3.83 [Above range]
3.	Central sponsored projects administration costs as a percent of dollars amount awarded	1.47%-0.56% [Inverse]	2% [Below range]

On the first metric, NSU falls within the benchmarking range, which was calculated by dividing the total FTE (3.0 FTE devoted to pre-award functions) by the total number of proposals submitted in FY99/00. NSU was above the median range on metric 2, which was calculated by dividing the total number of sponsored projects administration FTE (7.5) by the total amount of current sponsored funding ($19,591,577). Metric 3 was calculated by dividing the Office of Grants and Contracts total budget ($425,222) by the current total amount of sponsored funding ($19,591,577). As indicated, NSU falls slightly below the median range on this metric.

The benchmark study results for these three measures reflected that the number of proposals reviewed by the central projects administration FTE is greater for large research intensive institutions. The study indicates that, taken at face value, this would seem to indicate that research intensive institutions are more efficient than non-research intensive institutions; however, the study team believed that some of the difference is related to economies of scale and some to the effects of decentralization. Larger, more research intensive institutions tend to be more decentralized in their sponsored programs administration with more work directly supporting proposal submission done at the academic level than at less research intensive institutions. (The study only looked at a staffing and costs at the central level). The study also found that more research intensive institutions have fewer FTE per $10M than less research intensive institutions, and therefore, are more efficient; however, again the team believed that some of the difference can be explained by decentralization and also that the average grant size in larger institutions is larger than in smaller, less research intensive institutions. With respect

to central sponsored projects administration costs as a percent of dollars awarded, the study showed that those costs are less at research intensive institutions; again they attribute this in part to decentralization.

As noted in the benchmarking study, variation in staffing ratios and transaction costs among institutions are influenced by many factors, including organizational structure and responsibilities, complexity and mix of transactions, process quality, etc.

The third and final category, improving administrative services to faculty, focused on administrative staffing ratios relative to faculty population served. The metrics were intended to provide indicators of the efficiency and adequacy of the administrative service levels and included one metric applicable to NSU' Office of Grants and Contracts. Table 4 reflects NSU's standing in comparison to the benchmark range for the single, applicable metric in this category. [Note: Metric 2 of this category dealt with financial management and was not considered here, as at NSU that function is completed by Grants and Contracts Accounting rather than the Office of Grants and Contracts].

Table 4
Category 3: Improving administrative services to faculty

Measure/Metric	Benchmark Range	Nova Southeastern University
1. Number of funded principal investigators per central sponsored projects administration FTE	20.7-46.41	30.8 [Mid-range]

This is a measure of administrative efficiency *and* effectiveness ("hits" per unit cost of administration) and was calculated by dividing the number of principal investigators served by central sponsored projects administration FTE (3.5) on 106 separate awards. As the study concluded with respect to this overall category, variations in staffing ratios will be caused by many factors, including organizational structure and responsibilities, nature of service provided, and level of service.

VII. Analysis of Below Range Performance

The following is an analysis of NSU's below range performance on three metrics.

Category 1/Metric1: Number of proposals submitted per total faculty FTE.
Category 1/Metric 2: Percentage of faculty working as active investigators.
Category 2/Metric 3: Central sponsored projects administration cost as a percent of dollar amount awarded.

NSU's performance on these metrics reflects two significant factors regarding sponsored funding at NSU.

- First, the university's performance is entirely consistent with its long-standing emphasis, in practice, on practitioner preparation. The majority of NSU's faculty do not participate in sponsored funding endeavors. Of those who do, frequently they are responsible for multiple submissions in the course of a year. For example, 172 proposals were submitted in FY 99/00 by 88 individuals. Essentially, there is a core of faculty, and some staff, with the interest, inclination, and sufficient skill to pursue sponsored funding.

- Second, compounding this first factor are various operational considerations, which preclude or hinder pursuit of sponsored funding, e.g., overall faculty load and time allocation decisions made at the academic level, and differences among academic unit administrators regarding the importance and support accorded to sponsored funding pursuits. Very real fiscal constraints notwithstanding, these factors, nevertheless, impact sponsored funding activities. Ironically, the fiscal constraints that are perceived as limiting pursuit of sponsored funding could, in part, be addressed with *strategically* pursued sponsored funding that may offset expenses otherwise borne by institutional operating funds.

In summary, these factors reveal the compelling need to identify and address barriers to faculty pursuit of sponsored funding, and to explore innovative ways NSU may motivate faculty and enhance their competencies relative to proposal development.

VIII. Faculty Motivators and Barriers to Pursuing Sponsored Funding

Common responses heard from NSU faculty when they are asked why they do not conduct more research or pursue external funding to support research, teaching/training, or community service projects inevitably are, "My teaching load is too heavy;" " I don't have the time," "What incentives are there for me to do so?" "I have no experience in proposal writing," and "I am a teacher, not a researcher." The literature is rich with articles written about the importance of the common major missions of universities (i.e., research, teaching, and service) to the life of the institution, and results of studies conducted regarding the motivators and barriers to faculty pursuit of sponsored funding to support these missions.

Several studies are worthy of note. Walker (1992) found that among the incentives and policies which faculty deem most important to pursuing research initiatives are

> ...release time from teaching for research; true academic recognition and actual increased opportunity for promotion; greater university support for research and

opportunity for extra pay; more information on research opportunities and greater assistance in the preparation of proposals and publication of results; elimination of unnecessary administrative red tape and provision of as much flexibility as possible in the use of grant funds; and clear policy guidelines on the relationship of research to teaching, procedures for submission of proposals, and distribution of overhead funds. (p. 17)

Most dramatically, however, Walker (1992) found that, by far, "...the faculty's principal motives for outside research are personal professional development and the search for new knowledge. Thus their research can be seen to directly enhance the university by insuring the continuous improvement of its faculty for the task of teaching" (p. 17).

Wodarski (1991), in his efforts to build and maintain a positive culture of research at the University of Akron, demonstrates consistency with Walker's findings. For example, he stresses the importance of release time, a general recognition awards program for scholars who have contributed significantly to a discipline or who have brought in substantial grant and contract support, grants seminars, information exchange system, funds to cover unplanned research expenditures, and other support activities. Wodarski (1991) also emphasizes the importance of the "research services office" in the provision of service and support to faculty.

Finally, Stahler & Tash (1992) in their exploratory study conducted for the purpose of identifying factors responsible for the rapid growth of the fastest growing research universities in terms of external funding found that three broad, interrelated categories accounted for the rapid growth, as follows

- Commitment by university administrators to setting research as a high priority;
- The promulgation of policies by these administrators that encourage and promote research; and
- Providing the resources and infrastructure necessary to carry out research. (p. 21)

NSU's President's Faculty Scholarship Awards, initiated by the president and the Board of Trustees, and now in its second year, is a premier example of, and an excellent beginning in, recognizing and rewarding faculty for their scholarship. This is validated by the significant enthusiasm and interest NSU faculty have demonstrated in NSU's initiative. Highlights of similarly progressive and innovative initiatives at two other institutions follow.

- In addition to offering release time to their faculty who receive grant funding, the University of North Carolina-Greensboro offers other incentives. For example, the university has established a "Million Dollar Club", which recognizes faculty who 1) have submitted proposals requesting $1 million, and 2) who have received $1 million in sponsored funding. They are included in a dinner with the university president along

with other top institutional researchers. The institution also provides faculty with travel money to visit sponsored funding agencies, as well as funds to hire students to assist with research projects.

- Florida International University has established a Research Supplement Program. The Program objectives are (1) to increase the resources available to the university for its academic research program, (2) to offer salary supplements to regular faculty supported by extramural and grant funds in order to recognize their efforts in attracting and managing contract and grant support for the university's research, training, and service programs, (3) to increase grant-based activity; and (4) to recognize outstanding levels of excellent scholarly and creative activities.

The literature on faculty development and support reveals that such initiatives may be excellent stimulants to encourage and foster faculty involvement in research, teaching, and service projects in general, and the pursuit of external funding to support such projects in particular.

IX. Recommendations to Increase the Level of Nova Southeastern University's Sponsored Funding

In developing recommendations relative to increasing NSU's sponsored funding, it seems logical to look at NSU's performance in comparison to the results from the *1999 National Benchmarking Study*. As indicated in section VI above, NSU is well above or "on the mark" on six of the nine assessment metrics discussed in this report. By directing attention on the three areas in which NSU's performance is below range, as well as on the unique aspects of NSU's mission, culture, orientation, and organizational structure, the university may well be successful in increasing its revenue base through sponsored funding. Following are some suggested recommendations for doing so.

- ***Ensure a Balance Between Institutional Practice and Mission***

In order to ensure compatibility between practice and mission, NSU may wish to examine actual practice with respect to the pursuit of sponsored funding to support research, teaching, and service in the context of its mission. An assessment may need to be made of fiscal, administrative, and other constraints that preclude greater balance, and the practice and/or mission may need to be modified accordingly, to bring them into harmony. The issues that may emanate from lack of such harmony are not dissimilar to those that attend unfunded legislative mandates; good intent may not be translated into viable action with sufficient and appropriate resources.

- ***Hire Faculty with Strong Research and/or Grant Development Backgrounds***

With the increased focus on research by the professional accrediting bodies, some of

NSU's colleges/centers already have begun to focus on recruiting faculty with strong research backgrounds and track records in securing sponsored funding, as well as on attracting faculty with the skills needed to secure funding to support teaching/training and community service projects. Wodarski(1991) maintains that this is a must for institutions if they ever hope to secure large amounts of sponsored funding. He indicates that many universities maintain the expectation that all faculty members will become researchers, which he contends is questionable. Alternatively, he recommends that universities consider establishing "... the title 'research professor' to be bestowed upon faculty who have a proven track record of scholarly achievement. One of the rewards for becoming a research professor would be that the faculty member would not have to teach as many courses..." (p. 21). Moreover, in exchange for this special status, the faculty member would be expected to publish, secure outside funding, and serve as a model for other faculty.

- ***Provide Motivators and Decrease Barriers to Faculty Pursuit of Sponsored Funding***

If the university wishes to increase the number of faculty involved in pursuing sponsored funding, discussion should occur regarding the implementation of motivators such as those identified in section VIII. While NSU is providing several motivators (i.e., information on research opportunities, assistance in the preparation of proposals, recognition, reduction of administrative red tape, and grants seminars), others such as release time, further recognition and reward for faculty successful in attracting sponsored funding, adequate space and facilities, and equipment are critical.

- ***Consider Staffing Necessary to Complete University-wide Proposals***

Currently, the Office of Grants and Contracts has one pre-award position responsible for assisting faculty with proposal development. The office has experienced considerable turn-over in the position, which has a pay range of $30,000-$35,000 annually. The position has proven difficult to fill given the specialized nature of the position, the exceptional skills it requires, the workload, and the compensation. Two individuals with the necessary skills formerly in the position left, one after only barely 3 months in the position to accept a similar position with the Broward County School System, paying $10,000 more than the NSU position. The other individual accepted a position paying $8,000 more with Broward County government. Ideally, this position should be able to coordinate large institution-wide grant development initiatives with the appropriate academic centers, as well as write portions of the proposal; however, due to the problems associated with finding and retaining an individual with the right set of skills, this has not occurred on a regular basis.

An alternate means of securing assistance in the development of university-wide proposals is to hire a consultant; however, that is not without its challenges. First, identifying a consultant with specialized knowledge in a particular area can be difficult. Moreover, if the

consultant has little or no knowledge of the institution, the institution ends up paying the consultant while he/she becomes oriented to the culture of the organization and its operation and structure. Additionally, more than once have individuals represented themselves as skilled grant writing consultants only to fail to deliver in the end. With respect to fees, grant writing services for a foundation or corporate proposal can run from $500 to $3,000, and for state and federal proposals from $3,000 to $7,000. The rate a consultant charges obviously must be compared to the benefit gained from receiving the award, however, as in most all grant pursuits, there are no guarantees an award will be forthcoming.

Having the expertise available to produce university-wide proposals is critical, whether as the responsibility of an NSU employee, through the services of a consultant, or a blend of the two, and is worthy of further discussion.

- ***Continue Current Initiatives***

Initiatives currently in place such as the New Faculty Reception, which provides new faculty with information about the Office of Grants and Contracts, the Institutional Review Board, and the President's Faculty Scholarship Awards, should be continued. The reception also offers an opportunity for new faculty to network with other faculty for the purpose of identifying like or complementary interests for the purpose of developing collaborative grant applications.

The Office of Grants and Contracts continues to conduct two Grant Development Brown Bag Lunch Workshop Series each year; however, the curriculum is currently being reviewed for revision and implementation online, with a target date of early 2002. The Office also continues to respond to individual requests from academic centers for grant development presentations and training.

- ***Implement New Initiatives***

During 1999-2000, the Committee on Faculty Scholarship, Research, and Professional Development identified a number of new initiatives to promote faculty scholarship and research. These were identified in the *Report on Critical Initiative 3: Ensuring an Environment that Facilitates and Recognizes Scholarship and Research*, and included a faculty lecture series, "Research Posters on Parade", and a faculty web site dedicated to the promotion and advancement of faculty development, research, and scholarship. Implementation of these initiatives should be considered by administration, as they all appear to have merit.

- ***President's Faculty Scholarship Award***

NSU's President's Faculty Scholarship Awards, as noted above, have generated considerable interest and enthusiasm. NSU may consider extending this one step further, using

it as a stepping stone to securing external funding. An example of this is the internal award program at the University of North Carolina-Greensboro. That institution requires that, as a condition of award, all faculty who are recipients of internal awards must submit a proposal for external funding within one year of their award, as appropriate (e.g., there is an appropriate funding source). NSU may want to consider a similar requirement of its President's Faculty Scholarship Awardees.

- ***Increase Faculty Communication with the Office of Grants and Contracts***

The Office of Grants and Contracts' research associate monitors daily announcements in the *Federal Register* as well as news releases and web site changes by each Federal agency offering funding of potential interest to NSU faculty. She also monitors announcements of state funding and researches potential corporate and foundation funding sources. She has met with many faculty regarding their specific interests and those of the academic units in which they serve. When a new funding program is announced, she forwards the information to appropriate faculty and administrators at each of the NSU Centers, many of whom have contacted her to request that she watch for specific information. At the current time, approximately 400 names appear on her distribution list. During April 2001, 33 specific funding opportunities were distributed to NSU faculty and administrators throughout the university. It is imperative that faculty communication with the Office of Grants and Contracts be increased in order that the office is aware of specific sponsored funding interests.

X. Concluding Comments

NSU has a diverse faculty with a wide array of professional interests. A number of faculty have translated these interests into viable and fundable projects in support of research, teaching, and service. These projects have enhanced teaching and learning at NSU, enabled the university to make substantive contributions to the body of knowledge in many fields, and to reach out to multiple constituents with innovative projects and services. As a mature, growing institution we can do so much more. The collective intellect, enthusiasm, creativity, and competence of our faculty represent significant potential for garnering a greater level of sponsored funding. We need to explore how we may better tap that potential in the long-term interests of the university. This report has highlighted NSU's capacity to move in that direction and has recommended some vehicles for accomplishing that goal.

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APPENDIX A

Overview of Pre- and Post-Award Functions of NSU's Office of Grants and Contracts

Overview of Pre- and Post-Award Functions
of NSU's Office of Grants and Contracts

Pre-award activities performed within the Office include the provision of the following major activities:

- Creation and maintenance of grant and contract resource library;
- Development of a database of faculty interest profiles;
- Identification and dissemination of funding source information;
- Liaison with funding sources;
- Assistance with identification and conceptualization of projects/programs;
- Assistance with preparation of pre-proposal or proposal;
- Assistance with budget preparation;
- Review and submission of proposals;
- Completion of assurances/certifications;
- Resolution of compliance issues;
- Coordination of contract/subcontract review by university legal counsel; and
- Negotiation and acceptance of award.

Post-award activities performed within the Office include the provision of the following major activities:

- Assistance to the principal investigators in award administration;
- Interpretation of agency rules, regulations, guidelines, etc.;
- Liaison with external funding agencies;
- Maintenance of proper fiscal management, in conjunction with the grants and contracts accounting office;
- Preparation of contracts/subcontracts for sub-recipients and amendments;
- Preparation or assistance with the preparation of all funding agency reports, as required, in conjunction with the principal investigator and/or the accounting office;
- Assistance with non-competing continuation applications; and
- Participation in audits.

APPENDIX B

National Council of University Research Administrators (NCURA)
and the Society of Research Administrators (SRA)
Topical Outline of the Essential Elements of Research Administration

TOPICAL OUTLINE
OF THE
ESSENTIAL ELEMENTS OF RESEARCH ADMINISTRATION

PROLOGUE

Members of the National Council of University Research Administrators and the Society for Research Administrators have developed the topical outline below to assist institutions of higher education and their research administrators in assessing and further developing institutional tools to support the sponsored programs enterprise. This outline provides general information of use to all institutions; however, every institution and its research administrators must use the information in conjunction with institution-specific policies and practices. This outline defines general activities which define the breadth of the sponsored projects administration enterprise and should be viewed as such, rather than being seen as an all-inclusive list of duties and responsibilities for these administrators at all institutions.

I. Research Administration – The Profession

A. Research Administration
   1. Definition
   2. History
   3. Philosophy and Function
   4. Constituents

B. The Research Administrator
   1. Character Traits
   2. Roles and Responsibilities
   3. Authority
   4. Professional Development
   5. Personal Development

C. The Research Mission
   1. Purpose and Value of Research
   2. The Public Image and Perception of Research
   3. Academic Freedom
   4. Research and Promotion & Tenure
   5. Sponsored Research
   6. Public Funding of Research
   7. Research and Public Service
   8. Research and Economic Development
   9. Research and Graduate/Undergraduate Education

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10. Research Training and Continuing Education

D. Core Values
   1. Service to the Researchers
   2. Protection and Preservation of the Institution
   3. Support for the Creation and Dissemination of New Knowledge
   4. Commitment to the Public Good
   5. Service to the Profession

E. Interactions with Researcher
   1. Researcher/Research Administrator Relations
   2. Team Building and Participation

F. Research Administration and Other Institutional Operations
   1. Interoffice Relations
   2. Team Building
   3. Organizational Dynamics
   4. Research Administration and Fund Raising/Development

G. General Management
   1. Quality Research Administration
   2. Basic Tools for Research Administration
   3. Office Management
   4. Conflict Resolution
   5. Human Resource Management

H. Institution/Organization Setting for Research Administration
   1. University
   2. Colleges
   3. Medical School
   4. Hospital
   5. Biomedical Institution
   6. Independent Research Organization
   7. Nonprofit
   8. Foundation
   9. Industry
   10. Government

II. Infrastructure – The Framework for Research Administration

A. Organization for Research and Research Administration
   1. Distributed Environment for Research Administration
   2. Operational Structures
   3. Lines of Authority (Programmatic/Business)
   4. Research Administration Systems and Processes
   5. Institutional Communication
   6. Evaluation of Research Administration

B. Regulatory Environment
   1. Government Relations
   2. OMB Circulars
   3. Federal, State, and Local Laws & Regulations
   4. Sponsor Regulations

5. Institutional Policy
6. Boards, Councils, Committees

C. Legal Framework
1. Basic Legal Concepts
2. Key Contract Clauses
3. Subcontracting Basics
4. Specialized Contracting
5. Appeals Procedures
6. Lawsuits
7. Internal Revenue Service (IRS) Issues

D. Institutional Capacity Building
1. Internal Training and Professional Development
2. Internal Controls – Separation of Powers
3. Financial Management Information System
4. Electronic Research Administration

E. Institutional Investment in Research
1. Research Seed and Start-Up Funds
2. Special Projects Fund
3. "Overhead Return" Policy/Fund
4. Technology Investment Strategy/Fund
5. Cost Sharing Policy/Fund

III. Project Development – The Pre-Award Stage

A. Strategy Formulation
1. Institutional Capabilities Assessment
2. Researcher Interests and Expertise Database Development
3. Project Definition and Refinement
4. Determination of Matching Interests (Researcher to Sponsor)
5. Communication with Sponsors

B. Collection and Dissemination of Funding Opportunity Information
1. Search Tools and Strategies
2. Effective Information Collection and Follow-up
3. Information Dissemination Networks and Mechanisms
4. Application Forms – Storage, Retrieval, and Availability

C. Sponsor Structure, Protocol, and Practices
1. Federal Agencies
2. State Agencies
3. Foundations
4. Associations & Societies (Philanthropic, Professional, and Industrial)
5. Industry

D. Types of Proposals
1. Pre-Proposals
2. Unsolicited Proposals
3. Solicited Proposals

E. Proposal Development and Submission
1. Institutional Policies and Procedures

2. Functions of a Proposal
3. Essential Components of a Proposal
4. Proposal Writing
5. Budget Development
6. Administrative Data and Sponsor Forms
7. Proposal Review and Clearance
8. Taking Exception to Binding Terms and Conditions
9. Signature Authority and Delegation
10. Deadline Management

F. Collaborative Project Development
1. Intra-Institutional Multidisciplinary Projects
2. Inter-Institutional Projects
3. Institutional-Industry Relationships
4. Institutional-Government (CRADA's)
5. International Projects
6. Consortiums
7. Teaming Agreements

G. Marketing Research
1. Public Relations
2. Advocacy
3. Communication Tools

H. Pre-Award Sponsor Activities
1. Agency Receipt Processes
2. Peer Review Process
3. Review Criteria
4. Budgets/Financial Considerations
5. Notification Process

I. Post-Submission Communications
1. Submission of Additional Information
2. Award and Contract Negotiations
3. Declinations

IV. Project Administration – The Post-Award Stage

A. Award Process
1. Types of Award
2. Award Document
3. Terms & Conditions
4. Award Review
5. Award Acceptance
6. Authorized Official
7. Documentation and Notification of Project Requirements
8. Continuation and Renewal Process

B. Basic Agreements
1. Purchase Orders and Procurement Contracts
2. Federal Research Agreements
3. Cooperative Agreements

4. Industrial Research Agreements
5. Clinical Trial Agreements

C. Project Implementation
1. Principal Investigator's Project and Fiscal Responsibilities
2. Cost Definitions
3. Facilities and Administrative Costs Rate Development and Negotiation
4. Pre-Award Accounts and Costs
5. Project Changes and Rebudgeting
6. Cost-Sharing and Matching
7. Program Income
8. Effort Distribution and Reporting
9. Cost and Fund Accounting
10. Cash Management
11. Financial Reporting
12. Technical and Administrative Reporting

D. Project Support Systems
1. Human Resources
2. Purchasing
3. Subcontract Management
4. Payroll
5. Service Centers
6. Property Management
7. Facility Management
8. Records Management
9. Animal Facilities Management
10. Clinical Trials Management
11. International Programs Management
12. Intellectual Property Management
13. Internal Auditing
14. Whistleblowing Procedures
15. Health and Safety
16. Security

E. Departmental Administration
1. Project Financial Management
2. Project Personnel Management
3. Human Subject Management
4. Space/Facility Planning and Management
5. Researcher Support
6. Graduate Assistant and Post-Doctoral Fellows Support
7. Monitoring Project Activity and Deliverables
8. Large Multi-Investigator Projects Management
9. Multi-Sponsor Projects Management
10. Multidisciplinary Research Center Management
11. Collaboration with Central Administration

F. Close-Out
1. Responsible Offices

2. Final Financial Reporting and Close-Out Documentation
3. Final Scientific Progress Report
4. Final Patent Report
5. Special Cases

G. Post-Project Activities
1. Audits
2. Fiscal Records Retention
3. Scientific Records Retention

V. Public Responsibility – Fulfilling the Public Trust

A. Compliance & Assurances
1. History and Overview of Federal Regulatory Compliance
2. Establishment and Management of Compliance Programs

B. Project Integrity
1. Promotion of Responsible Conduct in Research
2. Conflict of Interest
3. Research Misconduct
4. Protection of Human Subjects
5. Humane Care and Use of Animals
6. Biohazards and Radiation Safety
7. Representations and Certifications

C. Preserving the Public Trust
1. Research for the Public Good
2. Freedom of Information Act
3. Public's Right to Non-Biased Research
4. Nondiscriminatory Dissemination of Research Results
5. Performance of Classified or Secret Research
6. Training in Research Integrity

D. Dynamics of Public/Private Collaborative Research
1. Reconciliation of Organizational Missions
2. Research Relationships
3. Research Results and Proprietary Information

E. Intellectual Property
1. Patents
2. Copyrights
3. Trademark & Service Mark
4. Publication Rights
5. Data Ownership and Retention
6. Inventor Assignment Agreements

F. Technology Transfer
1. Bayh-Dole Act
2. Invention Reporting
3. Licensing
4. Patent and Copyright Enforcement
5. Materials Transfer
6. Knowledge Transfer

7. Non-Disclosure Agreements
8. Proactive Commercialization of Technologies
9. Researcher-Owned Start-Up Companies
10. Equity Positions
11. Venture Capital Funds
12. Export Control/Licensing

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